

Appl. No.: 10/817,269  
Amdt. dated 08/03/2005  
Reply to Office action of April 28, 2005

#### REMARKS/ARGUMENTS

Reconsideration and allowance of the above identified application is respectfully requested in light of the above amendments and the following remarks.

##### The Information Disclosure Statement

In response to the Examiner's comment, a copy of the International Search Report is attached to the Appendix of the present Amendment.

##### The Drawings

The Examiner objected to the drawings since the non-imbricated stream as set forth in the claims was not illustrated. This objection has been overcome in that none of the presently pending claims recite a non-imbricated stream.

##### The Claim Rejections Under 35 USC §112

The Examiner initially objected to the phrase "further processing" as set forth in the base claims. This phrase has been deleted from the claims.

With regard to the recitation of controlling the conveying speed in Claim 2, this recitation has been revised to more clearly recite that the indicated criteria are first determined. It is accordingly believed that this objection has been overcome.

##### The Claim Rejections Under 35 USC §103

Claims 1, 3-7, 11-12, and 14-20 were rejected as being unpatentable over Koelle in view of Eberle.

By way of background, and as discussed in the introductory portion of the specification, it is an ongoing problem in the field of processing sheet-like objects,

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especially printed products, to change the formation of products conveyed in an imbricated stream from a "normal" imbricated formation to an "inverse" imbricated formation, and vice versa. Such a conversion is often necessary since the formation of products in a chain of processing stations is determined by the previous station, and that orientation does not always correspond to the orientation required by the following station. Several attempts have been made to change the formation efficiently, generally including completely separating and re-arranging the products. This, however, makes it necessary to accelerate the products in order to separate them from the incoming stream and to brake them in order to re-arrange them to the required formation. Consequently, the processing rate is limited, and the products may be damaged when accelerated too abruptly.

The invention is based on the discovery that just the opposite should be done, i.e. slowing down products being conveying in an imbricated formation with respect to trailing products, thereby forming an intermediate stack, and then reducing the intermediate stack according to the principle "last in -- first out" such that a continuous imbricated stream with the opposite formation is formed. All this takes place "in the flow", i.e. the intermediate stacks are reduced almost instantaneously after their formation to form an imbricated stream of products. The usually high conveying speeds of an incoming imbricated stream can be maintained, as no further acceleration is needed. Therefore, a change of formation can be achieved maintaining high processing rates.

Claim 1 and dependent Claims 2-6, 8-11, and 14 of the present application are now specific to the embodiment wherein the conveyed products are initially in an inverse imbricated formation **S'** and are converted into a normal imbricated

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formation **S** as illustrated in Figs. 1-8, and new base Claim 21 is specific to the embodiment wherein the conveyed products are initially in a normal imbricated formation **S** and are conveyed to an inverse imbricated formation **S'** as illustrated in Figs. 9-11. New dependent Claims 22-30 generally conform to dependent Claims 2-6, 9-11, and 14, respectively.

The cited references disclose single steps of the claimed method and single components of the claimed apparatus in a completely different context, such as formation of stacks from an inverse imbricated stream (Koelle and Mejdahl) and destacking of a stack to form an imbricated formation (Eberle and Corradi). The references, however, do not give any hint or motivation to combine them to achieve a method or apparatus for changing the formation of an imbricated stream of sheet-like products.

Koelle relates to a process of forming stacks of documents in a "ready-to-ship" form by separating individual sheets from a web of the sheets, and delivering different numbers of the documents in a descending stream to a stacking unit where a stack is formed from bottom to top. An important object of the Koelle invention is the ability to form "ready-to-ship" stacks (col. 1, line 47) with each stack containing a predetermined and differing number of sheets (col. 2, lines 48-49). This being the case, there would have been no motivation to separate the stacks of Koelle in the manner taught for example by Eberle, and indeed, such separation would defeat the desired objectives of the Koelle patent.

The "further processing" of the stack noted in Koelle at col. 5, lines 3-6, specifically refers to a "bundling" of the stack, and the phrase cannot be employed to support the Examiner's contention that a de-stacking of the stacks disclosed by Koelle would have been obvious.

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Claim 10, which is specific to the embodiment where the conveyed products are turned during the conveying step (note Figs. 10-11), was rejected over a proposed combination of Koelle, Eberle, and Reist '894. The Reist patent does not supply the deficiencies of the proposed combination of Koelle and Eberle as noted above, and this claim is also seen to be allowable.

Claims 1, 3-7, 11-12, 14-16, and 18-19 were rejected as being unpatentable over Mejdahl (WO 93/15006) in view of Eberle.

Mejdahl discloses a method and apparatus to sort a section of sheet-like objects advanced in an imbricated stream into bundled groups which correspond to different groups or classes of objects (page 6, lines 20-22). The bundles are then conveyed further. There is no intent that the bundled groups would be separated again, since the aim of the bundling is to put together objects of different groups or classes (e.g. belonging to a certain print job). Therefore, the skilled person would refrain from adding a destacking station of the type disclosed by Eberle, since this would contradict the aim of Mejdahl.

Claims 1, 3-8, 11-12 and 14-20 were rejected as being unpatentable over Koelle in view of Corradi, and Claims 1, 3-8, 11-12, 14-16, and 18-19 were rejected as being unpatentable over Mejdahl in view of Corradi. These rejections correspond to the same groups of claims discussed above, but with the patent to Corradi substituted for the patent to Eberle. Corradi, which discloses a de-stacking arrangement wherein the stacked sheets are pulled from the bottom of the stack, is no more pertinent than is the patent to Eberle, and Corradi would not have suggested the de-stacking of the stacks disclosed by either Koelle or Mejdahl for the reasons noted above. In

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addition, even if the skilled person would consider destacking, e.g. with an apparatus according to Eberle or Corradi, there still would be no hint that destacking could be used for reversing the order of products and for generating an imbricated stream having an opposite formation with respect to the original one without distorting the overall flow of products. With Eberle, the overall flow of products is interrupted when a new stack comes into the destacking position. Further, when stack 7 in Fig. 3 or 4 of Corradi is completely destacked the product stream is interrupted until a following stack 5 is moved into the destacking position.

#### Summary

In summary, the Examiner's conclusion that the claimed invention is rendered obvious by the cited prior art is based on an impermissible hindsight analysis of the claimed invention, rather than upon what the references themselves suggest. It is submitted that the skilled person would not even consider the cited references when trying to develop a method and apparatus for changing the formation of an imbricated stream of sheet-like products, since the known approach was completely different as discussed above. Generating intermediate stacks and destacking them almost instantaneously in the flow for the purpose of reversing the formation of products is highly creative and would have been non-obvious at the time of the present invention..

Respectfully submitted,



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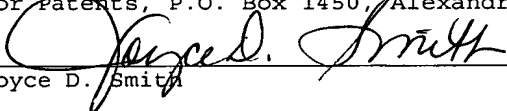
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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/CH 02/00446

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B65H29/66 B65H39/10 B65H33/12 B65H5/24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 704 604 A (WINTERSTEIN GERHARD ET AL) 6 January 1998 (1998-01-06) column 4, line 62 - column 5, line 6; figures	1,12
Y	WO 93 15006 A (SWARTZ PER GUNNAR ; MEJDAHL NILS JONNY (SE)) 5 August 1993 (1993-08-05) page 4, line 9 - line 28; figure 2	1,12
Y	US 4 771 896 A (NEWSOME JOHN R) 20 September 1988 (1988-09-20) column 4, line 6 - line 28; figure 3	1,12
Y	EP 0 526 677 A (CORRADI S A) 10 February 1993 (1993-02-10) column 5, line 5 - line 58; figures 1-3	1,12
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

8 November 2002

Date of mailing of the international search report

15/11/2002

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## INTERNATIONAL SEARCH REPORT

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 326 088 A (NEWSOME JOHN R) 5 July 1994 (1994-07-05)	
A	EP-0 806 391 A (FERAG AG) 12 November 1997 (1997-11-12)	
A	CH 682 484 A (GRAPHIA HOLDING AG) 30 September 1993 (1993-09-30)	



## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CH 02/00446

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